HEALTH MATTERS.

Suicide among German Children.

A CURIOUS return has been made concerning some 289 instances of suicide by school-children in the German Empire during the six years 1883 to 1888 inclusive, as we learn from the *Lancet* of Jan. 31. The interest of the return centres in the motives assigned for these extraordinary acts. Among the cases which could be so explained, the largest proportion appear to have been attributable to fear of punishment. This, perhaps, might have been expected; nor is it altogether surprising that such extreme terror should be chiefly exhibited among pupils of the elementary schools. The fact that twenty per cent of all the collected cases fall into this particular class should, however, afford food for reflection. It is certain that undue severity has been practised, or at least undue apprehension has been aroused, in every one of these instances, seeing that the little victims were so far thrown off their balance by it as to be driven to the extremity of suicide. It would be unjust to assume that for these exaggerated fears the teachers are wholly or even mainly responsible; but, on the other hand, no really efficient teacher would ever leave upon a child's mind an impression so horrible as to precipitate such a crisis as this. The child who takes his own life rather than face an angry teacher must believe, rightly or wrongly, in the ferocity of the teacher; and it is much to be feared that children of tender years, even when they are not so terror-stricken as this, are apt to nurse a suspicion that most strangers and some friends, the teacher in particular among the latter, are human wolves. To eradicate this mischievous misapprehension ought to be one of the first tasks of a successful preceptor. Among the high-school pupils the suicides are almost exclusively boys, and here the most common motive is dread or disappointment in connection with examinations. Mental derangement and thwarted ambition come next in order, while precocious sentiment claims its share to the extent of four boys and one girl, whose unhappiness is recorded as due to *une affaire de cœur*. It is some satisfaction to be able to add that these emotional young people were all past the elementary school stage.

In the *British Medical Journal*, Oct. 11, 1890, the following additional data are given: —

Of the 289 cases of suicide among school-children in Prussia, 240 of them were boys, and 49 girls. The cases are apportioned among the different years as follows: in 1883 there were 58 suicides; in 1884, 41; in 1885, 40; in 1886, 44; in 1887, 50; and in 1888, 56. In 86, or 29.8 per cent, of the cases, the motive of the deed is unknown; but in 80 the causes were fear of punishment; in 19, disappointed ambition; in 16, fear of examination; and in 28, insanity and melancholia; 5 of the suicides are attributed to love: and 7 are believed to have been half unintentional.

The Action of Koch's Liquid on the Monkey.

The effects of Koch's liquid on a quadrumanous animal so vulnerable to the invasion of the bacillus as the monkey have been investigated recently by Hénocque at the Collège de France, says the *Lancet* of March 7. M. Hénocque states that when his monkey entered the laboratory (Dec. 21, 1890), auscultation yielded no physical signs denoting phthisis. Two days after the first injection a few râles and impaired resonance were noted at the right apex. The third injection determined dulness still more marked, and, in addition, slight dulness at the left apex. From this moment all the symptoms of acute phthisis manifested themselves (cough, anorexia, debility, intense fever); and eight days later the animal died, having lost a tenth of his weight. At the necropsy four tubercular masses of the size of a big pea were discovered in the right lung, the left organ in two-thirds of its extent being the seat of caseous pneumonia. Surrounding the lesions there were zones of red hepatization, with marked exudation of red blood-corpuscles. Two guinea-pigs have been inoculated with portions of the pneumonic tissue, and both animals now present signs of cutaneous and glandular infection. The total quantity of fluid received by the monkey was six milligrams, — a quantity apparently quite capable of determining the onset of acute phthisis.

NOTES AND NEWS.

THE facts derived from the study of soil-absorption at the Purdue University Agricultural Experiment Station, Lafayette, Ind., lead to the same conclusion as the results of the latest experiments on the use of fertilizers,—that, in a system of farming having in view large crops and permanent improvement of the land, phosphoric acid and potash should be used in considerably greater amounts than the crops required, while nitrogen compounds should be used in amounts not greatly in excess of the needs of the crop.

— Professor Ogata of Tokio reports a case of cholera occurring in a dog. The dog had been vomiting and purging for some time, according to the *Medical Record* of March 28, and was brought to Dr. Ogata's laboratory by a police-surgeon. After the death of the animal, several plate-cultures were made of the contents of the small intestine, from which comma bacilli were obtained in almost pure culture. Examination under the microscope, of a thin piece of the small intestine, which had been kept in alcohol and stained with gentian violet and alkaline methyl blue, showed the presence of the comma bacilli, not only on the surface of the mucous membrane, but also within Lieberkuhn's glands.

— The habits of *Brachytrypus*, the huge desert cricket of the Mediterranean region, have only recently been studied by A. Forel, although, excepting the mole crickets, it is the largest known European form. The reason appears, as we learn from *Psyche* for April, in the fact that it is a nocturnal insect, remaining in its burrows by day, and even closing the entrance to the same (although it is three or four centimetres in diameter) to an extent of several centimetres, leaving only a little sand-heap to mark its place. Dr. Forel discovered them by marking the spot where he saw and heard them chirping lustily in the dusk, and the next morning detected the heaps, carefully removing which, the burrows were found. These extended for over a metre in length, and half as much in depth; and digging the creature out was a thankless task. Dr. Forel obtained some by drowning them out, and others in a way characteristic of a myrmecologist. He secured a bag of ants, a species of *Acantholepis*, and, setting them loose before the burrow, they entered it, and soon ousted the occupant.

— In the *Lancet* of Feb. 14, Mr. J. A Wanklyn, in a note on aldepalmitic acid, says that it has long been known that the acids arising from the saponification of butter include small proportions of butyric, caproic, caprylic, and rutic acids. The larger proportion of the acids has, up to the present, been held to consist of palmitic, oleic, and stearic acids, which are non-volatile, and insoluble in water. In the course of investigations with which he has been engaged for a number of years, Mr. Wanklyn states that he has arrived at the very unexpected result that the main acid is not palmitic acid, but an acid quite distinct from palmitic acid, both in composition and properties. On the 19th of January he had the honor of reading a paper on the subject before the Society of Chemical Industry, and in due time the details will doubtless be published. In the mean time it may be of interest to mention that the new acid, which is so abundant as to amount to about half of the weight of the dry butter, differs from palmitic acid by containing less hydrogen, and that its formula is $(C_{16}H_{30}O_2)n$. The melting-point of the new acid is about 50° C., whereas palmitic acid melts at 62° C. The new acid possesses the extraordinary property of consolidating or gelatinizing alcohol. At temperatures below 5° C it gelatinizes more than five times its weight of alcohol. Part of the alcohol is held mechanically by a sponge-like action, and part is retained in chemical combination. Palmitic acid possesses no such property: indeed, no other substance does.

— The following is an abstract of a bulletin of the Ohio Experiment Station, now awaiting publication by the State printer. The oat-crop of Ohio for 1890 was one of the poorest on record: it was quite the poorest at the experiment station, owing to the attack of a peculiar disease which caused the blades to turn yellow when the oat-plants were about six inches high, and stunted their growth throughout the season. Only four out of the fifty-four differently named sorts tested by the station in 1890 yielded so much as thirty-three bushels per acre. Generally, five to eight pecks of

seed-oats have given a larger yield than a larger quantity; and drilling has been followed by better crops than broadcast seeding. An experiment in steeping seed-oats in hot water indicates that by this method the greater portion of the loss from the smut of oats may be prevented. The process, briefly stated, is as follows: have two vessels, in one of which water is kept warmed to about 120° F., and in the other to as nearly exactly 135° as possible. Have a basket of wire netting, or a loose splint basket covered with cloth. The water-baths must be large enough to admit this basket. Fill the basket with seed-grain, and immerse it in the cooler bath, keeping it there and stirring it around until all the grains are warmed; then lift it out and plunge it into the hot bath, where it should remain from eight to ten minutes, being stirred or agitated meanwhile. Then remove it and dip it into cold water, or spread the grain out and throw cold water over it, after which dry it sufficiently for sowing. The effectiveness of this method depends upon having the water hot enough to destroy the smut germs, which may be adhering to the outside of the grains of oats, but not so hot as to destroy the oat germ. The reason for using two vessels is, that if one vessel were used, the water would be cooled too much by the cold grain to accomplish the purpose in view, or, if it were heated hot enough to do this, it would be so hot as to destroy the vitality of much of the grain.

— The injury from hail in Würtemberg during the sixty years 1828–87 has been investigated by Herr Bühler. As stated in *Nature* of March 19, the yearly average of days with hail is 13; and about .92 per cent of the cultivated land was affected, damage being done to the extent of about $600,000. July had most hail (34 days); June coming next, with 30.1 days. There is no evidence of increase of hail in the course of decades. The Black Forest district seems to have specially suffered. The author makes out 17 paths of the hail-storms. One very often frequented is that on the Danube, from Scheer to Ulm (70 kilometres long and 15 broad). All the paths seem connected with the configuration of the ground, and limited in many cases by quite low heights. Slopes with a western exposure are more in danger than those with an eastern, and plains suffer much less than hilly ground. The frequently affirmed influence of forest on hail-fall is not distinctly proved by the Würtemberg data. Herr Hellmann has made a further study of the figures, and finds that in Würtemberg, as in the Rhone Department and in Carinthia, the chief maximum falls in the second half of July. A secondary one, nearly as high, occurs June 20–24. This holds also for Carinthia; while in the Rhone Department this maximum is earlier, in the first half of June.

— We have received from the Johns Hopkins Press a pamphlet containing "The History of University Education in Maryland," by Bernard C. Steiner, and an account of the origin and organization of the Johns Hopkins University, by President Gilman. Maryland has been very backward in providing for the higher education, whether general or professional, and Mr. Steiner, therefore, is unable to present so interesting a history as would be possible in some other States; but his account is straightforward and as minute as most readers will care for. President Gilman, after paying tribute to the memory of Mr. Hopkins, proceeds to explain more especially on what principles and with what objects in view the institution over which he presides was organized. He gives some account of the inauguration of the university, with extracts from the speeches made on that occasion by himself and by President Eliot of Harvard, and then briefly notes some of the main points in the university's history. The prominence of the graduate department is shown by the fact that from the first the graduate students have been nearly twice as numerous as the undergraduates, though in the last few years the undergraduates have increased the fastest.

— In answer to the query, "Do Americans love flowers?" the *Illustrated American* says that the fact of the matter is, we are not true lovers of flowers. We have imported the cult, and in time may pose as fairly faithful worshippers as we have succeeded in doing with respect to horses, dogs, and chickens. We overload our dinner-tables with roses, the florists make our ball-rooms reek with the stale smell of fading gardenias, our women decorate themselves with huge posies, and we pile wreaths upon the coffins of departed friends. This is the love of display, not the love of flowers. Look at the names our indigenous flowering plants bear. Nature has supplied us with a flora as rich as any in the world. But, with the exception of the golden-rod, we have not given our flowers names that have any pretence to being poetical,—names which show that we take any interest beyond a purely scientific one in the plants. That lovely yellow violet, with its outside petals tinted a reddish brown, which clusters on our Western foot-hills, is only known as the *Viola Nuttallii*. In countries where the wild-flowers are really appreciated, the folk would have found some more suggestive name, such as "forget-me-not," "daisy," or "our lady's slipper." To whom, outside of Boston, would *Anemone patens* suggest the large purple flowers that beautify the rugged Rockies, or that *Calochortus venustus* was the lovely plant with crocus-like flowers that whitens the plains? And yet these are the only names they bear.

— An interesting general statement of the characteristic features of the entomological, and especially coleopterological, fauna of the canton of Valais, comprising the upper valley of the Rhone, will be found in Professor Ed. Bugnion's "Introduction to Favre's Faune des Coléoptères du Valais," now publishing in quarto form in the memoirs of the Swiss Society of Natural Sciences (vol. xxxi). Mr. Bugnion, according to *Psyche*, divides the district into three regions or zones,—the lower, the sub-alpine or forest, and the alpine,—their highest levels respectively at 800, 2,000, and 2,700 metres. The sub-alpine he further subdivides into a lower forest, whose upper limit reaches 1,350 metres, and an upper forest region, the latter characterized by the prevalence of conifers and rhododendrons. These divisions, as he points out in a note, differ from those of preceding authors, though not very greatly from the latest authority. Heer in 1837, writing for the whole of Switzerland, made out seven zones, each 450 metres in height after the field (campestre) which terminated at 300 metres. The succeeding were the hill or colline, with an upper limit at 750, the mountain (1,200), sub-alpine (1,650), alpine (2,100), subnivale (2,550), and nivale (3,000). Rion in 1852 made four divisions as follows: 1. Zone of cultivation, 375–1,263 metres; 2. Zone of conifers, 1,263–2,050 metres; 3. Zone of alpine pasturage, 2,050–2,760 metres; 4. Zone of eternal snow, 2,769 metres upward. Christ in 1883 also made four divisions: 1. Lower zone up to 550 metres (700 in south Switzerland; 2. Zone of deciduous trees, 550 (or 700)–1,350 metres; 3. Zone of conifers, 1,350–2,100 metres (2,300 in central Alps); 4. Alpine zone, 2,100 (or 2,300)–3,000 metres (perpetual snow). Professor Bugnion gives a larger number of groups of specific forms, mostly *Coleoptera*, inhabiting two districts, or living under different conditions, etc., in illustration of their geographical distribution, and, after discussing at some length the geological antiquity of insects, endeavors to show from what sources the different elements of the entomological fauna of Valais were directly derived.

— The population of the city of Vienna, according to the *Journal of the Society of Arts*, London, is about 800,000, and, with the suburbs and neighborhood, over 1,000,000. The consumption of animal food in 1888 consisted of 77,512 cattle, 147,978 calves, 31,469 sheep, 37,105 head of lambs, kids, and sucking pigs, and 178,466 pigs; of meat, 189,171 metrical quintals; of game, 2,377 deer, 871 wild boars; chamois and other game, 10,221 head; hares, 201,221; pheasants, 27,048; partridges, 112,778; of poultry, 898,968 pairs of fowls and pigeons; 485,775 pairs of geese, ducks, turkeys, and capons; of fish and crayfish, 12,851 metrical quintals; of butter, oil, and fat, 35,848 metrical quintals; of eggs, 83,750,000; honey, 694 metrical quintals; rice, 13,210 metrical quintals; flour, 525,795 metrical quintals; bread, 176,437 metrical quintals; wheat, 36,288 metrical quintals; legumes, 75,102 metrical quintals; asparagus, 333 metrical quintals; cauliflowers, 4,198 metrical quintals; fruits, fresh, dried, or preserved, 256,523 metrical quintals; liqueurs, 62,500 hectolitres; wine, 361,300 hectolitres; beer, 1,039,000 hectolitres. There were also killed by the butchers for food, 6,277 horses. The price of meat per kilogram ($2\frac{1}{5}$ pounds) was, beef, 18 to 66 kreutzer; pork, 32 to 82 kreutzer; veal, 20 to 70 kreutzer; mutton, 20 to 60 kreutzer. The average number of fat cattle arriving weekly was 4,765 head.